



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

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July 13, 2015

Michael Joyce, Managing Director
Dighton Power, LLC
1450 Somerset Avenue
Dighton, Massachusetts 02715

RE: Transmittal No.: X265361
Application No.: SE-15-012
Class: OP7.5
FMF No.: 281655
AIR QUALITY PLAN APPROVAL

Dear Mr. Joyce:

The Massachusetts Department of Environmental Protection (“MassDEP” or “Department”), Bureau of Air and Waste (BAW), has reviewed your Non-Major Comprehensive Plan Application (“Application”) listed above. The Application was submitted requesting Department approval of changes to past approved regulatory requirements, which includes, but is not limited to the removal of an annual VOC stack test requirement, correcting obsolete regulatory language references and establishing emission limits for non-typical short duration operating scenarios, such as, combustion turbine protective load shedding, re-commissioning and tuning at Dighton Power, LLC (“Dighton Power”), 1450 Somerset Avenue, Dighton, Massachusetts (“Facility”). The Application bears the seal and signature of William F. Stengle, Massachusetts Registered Professional Engineer Number 38432.

This Application was submitted in accordance with 310 CMR 7.02 Plan Approval and Emission Limitations as contained in 310 CMR 7.00 “Air Pollution Control,” regulations adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-J, Chapter 21C, Section 4 and 6, and Chapter 21E, Section 6. MassDEP’s review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air pollution control engineering practice, and hereby grants this **Plan Approval** for said Application, as submitted, subject to the conditions listed below.

Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner/operator (“Permittee”) must comply in order for the Facility to be operated in compliance with this Plan Approval.

1. DESCRIPTION OF FACILITY AND APPLICATION

Dighton Power submitted Application No. SE-15-012 requesting Department approval of changes to past approved regulatory requirements, which includes, but is not limited to the removal of an annual VOC stack test requirement, correcting obsolete regulatory language references and establishing emission limits for non-typical short duration operating scenarios, such as combustion turbine protective load shedding, re-commissioning and tuning. The submitted Application and changes requested, as approved herein, do not increase Dighton Power’s consecutive 12-month period potential emissions.

The Facility site consists of approximately 17.5 acres of industrially zoned land situated off Somerset Avenue in Dighton, Massachusetts. The neighboring community is a mix of undeveloped, residential, industrial, and commercial land use. Site access is provided by an access road from Route 138. The approximate Universal Transverse Mercator (UTM) coordinates of the stack are 323.49 km east and 4633.01 km north.

Dighton Power operates a natural gas fired combined-cycle independent power facility of approximately 180 megawatts (MW) net nominal output. The facility is based on an ABB GT11N2 combustion turbine with a nominal capacity of 120 MW and a heat input rating of approximately 1,327 million Btu per hour (MMBtu/hr) at 50°F ambient temperature at 100 percent load. The hot exhaust gases exiting the turbine pass through a heat recovery steam generator (HRSG), which uses the heat from these gases to produce steam. There is no supplemental fuel firing in the HRSG.

The HRSG houses a carbon monoxide catalyst followed by a selective catalytic reduction (SCR) catalyst and an ammonia injection grid. These catalysts control emissions of carbon monoxide (CO) and nitrogen oxides (NO_x). The steam produced in the HRSG is fed into a condensing steam turbine/generator to generate a nominal output of 60 MW of electrical power. The exhaust gases, after passing through the HRSG, are vented to atmosphere via a 150-foot stack with an inside diameter of 204 inches. The stack exit velocity ranges between 19 and 75 feet per second at a stack exit temperature between 101°F and 266°F.

Major ancillary equipment associated with the facility include: a control room, CO catalyst, SCR catalyst and control system, air-cooled steam turbine condenser, ammonia storage tanks, continuous emissions monitoring system (CEMS), a small 2-cell auxiliary cooler and one emergency diesel engine fire pump.

The facility has the capability to operate continuously (24 hours per day and 7 days per week) except for servicing, maintenance and repair activities.

A. Plan Approval

A Comprehensive Plan Application (CPA) Approval No. 4B96096 was issued to Dighton Power by the Department on October 6, 1997, as required by 310 CMR 7.02, to ensure that the new facility would be in compliance with all applicable federal and Department air quality regulatory requirements. The Department regulations required Best Available Control Technology (BACT) for all emissions from the facility and Lowest Achievable Emission Rate (LAER) for nitrogen oxides (NO_x). A BACT analysis for the emissions of sulfur dioxide (SO₂), carbon monoxide (CO), particulate matter (PM) and volatile organic compounds (VOC) was performed as part of the original CPA No. 4B96096 review. Similarly, a LAER analysis for nitrogen oxides (NO_x) was performed as part of the original CPA No. 4B96096 review. The approved BACT and LAER were embodied in Conditional Approval No. 4B96096 and subsequently, in a superseding Final Approval No. 4B02019 issued July 19, 2002 and remain unchanged in this Plan Approval. Plan Approval No. SE-15-012 (Transmittal No. X265361) dated July 13, 2015 supersedes Final Approval No. 4B02019 (Transmittal No. W028782), issued on July 19, 2002.

B. Operating Permit

Within one year of the commencement of operation, Dighton Power filed an application for an Operating Permit pursuant to 310 CMR 7.00: Appendix C. Dighton Power currently operates the facility in accordance with a May 26, 2010 issued Administrative Amendment (4M10014) to Final Air Quality Operating Permit (OP) No. 4V07027 issued on August 20, 2009. In accordance with 310 CMR 7.00: Appendix C, Dighton Power filed a timely Operating Permit Renewal Application No. SE-14-006 on February 19, 2014. MassDEP determined OP Renewal Application No. SE-14-006 as administratively complete on April 9, 2014. In accordance with 310 CMR 7.00: Appendix C(13) Renewals and Appendix C(11) Application Shield, Dighton Power was afforded an application shield for the OP Renewal Application.

C. Prevention of Significant Deterioration (PSD) Review

The facility has the potential to emit less than 100 tons per year of any regulated pollutant and therefore is not subject to 40 CFR 52.21 Prevention of Significant Deterioration of Air Quality.

D. 310 CMR 7.00: Appendix A: Emission Offsets and Nonattainment Review

Appendix A: Emission Offsets and Nonattainment Review applies to a new major source or major modification located in an area designated as nonattainment. In 1997, Dighton Power filed an application with MassDEP to construct a new major source of nitrogen oxides (NO_x). At that time, Dighton Power's application, as proposed, had potential emissions of NO_x above the "major source" threshold criterion of 50 tons per year, as defined in 310 CMR 7.00: Appendix A. NO_x emissions are a precursor to the formation of ozone and are therefore regulated pursuant to Appendix A. The applicable requirements for Dighton Power's proposed new major stationary source of NO_x required the source to meet Lowest Achievable Emission Rate (LAER) and obtain emission offsets. The Department determined that NO_x LAER for the facility was an emission limit of 3.50 ppmvd corrected to 15 percent O₂. Offset requirements for major sources of NO_x in a "serious" ozone nonattainment region were required at a minimum ratio of 1.2:1. Rules for obtaining offsets in Massachusetts are set forth in 310 CMR 7.00: Appendix A and Appendix B. Offsets are generated by withdrawing Massachusetts-certified Emission Reduction Credits (ERCs). ERCs can come from shutting down an existing source or curtailing its operation, or by

“over-controlling” an existing source. In all cases, offsets must be real, surplus, permanent, quantifiable and federally enforceable. Applicants must obtain five (5) percent more ERCs than the number of ERCs actually needed for offsets. In Dighton Power’s case, the facility was required to obtain 1.26 times the maximum potential facility NO_x emissions, equal to 96 tons. This amount of offsets was purchased from Nantucket Electric Company for its shutdown of the Candle Street generating facility.

On April 6, 2015, Dighton Power submitted Application No. SE-15-012 requesting Department approval of changes to past approved regulatory requirements, which includes, but is not limited to the removal of an annual VOC stack test requirement, correcting obsolete regulatory language references and establishing emission limits for non-typical short duration operating scenarios, such as combustion turbine protective load shedding, re-commissioning and tuning. The submitted Application and changes requested, as approved herein, do not increase Dighton Power’s consecutive 12-month period potential emissions. Pursuant to 310 CMR 7.00: Appendix A: Emission Offsets and Nonattainment Review, the Department has determined that Dighton Power’s proposed modifications do not constitute a physical change or change in the method of operation and as such, is not considered a major modification to an existing major source .

E. New Source Performance Standards (NSPS)

Dighton Power is considered an electric utility stationary gas turbine since it was constructed for the purpose of supplying more than one-third of its potential electrical output to a utility power distribution system for sale. The NSPS for gas turbines as embodied in 40 CFR 60, Subpart GG is applicable to the facility. Subpart GG restricts NO_x emissions to a nominal value of 75 ppm (approximately equivalent to 0.3 lb/MMBtu) for an electric utility gas turbine of 100 MMBtu/hr or greater. Dighton Power meets this limit through dry low-NO_x combustion technology in conjunction with SCR add-on NO_x controls. Subpart GG also has fuel sulfur restrictions that are met by using natural gas.

F. Title IV Sulfur Dioxide Allowances and Monitoring

Pursuant to 40 CFR 72, Dighton Power is designated as a Phase II Acid Rain “New Affected Unit” effective January 1, 2000 or 90 days after commencement of activities, whichever came later. The Acid Rain Program effects reductions of SO₂ from existing power plants by allocating allowances to existing power plants and by requiring new plants to purchase allowances to offset their SO₂ potential to emit. Allowances were available through the Chicago Board of Trade and were secured by Dighton Power in the amount of 13.4 allowances (i.e. 13.4 tons per year) prior to operation. The first date for the facility to hold allowances was January 30, 2001. Dighton Power is also required to have a Designated Representative (DR) and to install and operate a continuous emissions monitoring system (CEMS). The DR is the facility representative responsible for submitting required permits, compliance plans, emissions monitoring reports, offset plans, compliance certification and is responsible for the trading of allowances. CEMS and continuous opacity monitoring system (COMS) requirements are specified in 40 CFR 75 for monitoring SO₂, NO_x and CO₂ emissions (lb/MMBtu), as well as opacity and volumetric flow of the flue gas. As an option, gas and oil fired facilities may conduct fuel quality and fuel flow monitoring in place of SO₂ monitoring and flue gas flow monitoring. Natural gas fired units complying with 40 CFR 75.14(c) are exempt from the opacity monitoring requirements. In

addition, pursuant to 40 CFR 75.13, CO₂ emissions may be estimated in accordance with 40 CFR 75, Appendix G, in lieu of installing a CO₂ CEMS.

G. Emission Limitations for Fossil Fuel Utilization

310 CMR 7.02(8) Table 6 limits new fossil fuel utilization facilities greater than 250 MMBtu/hr input to a particulate emission rate of 0.05 lb/MMBtu. The maximum allowable particulate emission rate for the Dighton Power facility is less than 0.02 lb/MMBtu.

H. Dust, Odor, Construction and Demolition

310 CMR 7.09 require that dust or odor causing emissions from the construction or operation of a facility shall not cause or contribute to a condition of air pollution.

I. Noise Control Regulation and Policy

A predictive noise analysis was performed as part of the original CPA No. 4B96096 review. The results from the analysis are contained in Table 6 of this Plan Approval. The facility is subject to 310 CMR 7.10 and the Department's Division of Air Quality Control (DAQC) Policy No. 90-001 dated February 1, 1990, which pertain to noise. DAQC Policy No. 90-001 states that a source of sound will be considered to be violating the Department's noise regulation (310 CMR 7.10) if the source:

1. Increases the broadband sound level by more than 10 dB(A) above ambient; or,
2. Produces a "pure tone" condition – when any octave band center frequency sound pressure level exceeds the two adjacent center frequency sound pressure levels by 3 decibels of more.

These criteria are measured both at the property line and at the nearest inhabited residence. Ambient is defined as the background A-weighted sound level that is exceeded 90 percent of the time measured during equipment operating hours. Ambient may also be established by other means with the consent of the Department.

Noise from the facility was predicted to comply with the Department's DAQC Policy No. 90-001 at all neighboring residences. In addition, Dighton Power agreed to comply with Noise Policy No. 90-001 at all residential property boundaries for which Dighton Power did not own or control the property. However, noise levels from the facility were expected to exceed the DAQC Noise Policy sound level criteria of 10 db(A) above ambient background at the Bristol County Agricultural School property (Receptor No. CNL-2), the Town of Somerset property (Receptor No. CNL-3) and the Advanced Looseleaf industrial property (Receptor No. CNL-1).

Significant contributors to facility noise, housed within the plant, include the combustion turbine and generator, HRSG, steam turbine and pumps and other machinery. Exterior noise sources include the air-cooled condenser, air inlet and stack exhaust, transformer, auxiliary cooler, miscellaneous pumps and equipment and building ventilation systems. Equipment may operate 24 hours per day, 7 days per week, year round. The plant layout was designed to optimize the buffering and shielding effects of plant buildings.

Based on the predictive analysis, the following noise mitigation measures were incorporated into the facility design: muffling the gas turbine exhaust stream, extensive quieting of the air-cooled condenser, orienting the air-cooled condenser to minimize exposure to nearest residences, enclosure hoods for turbine and generator, special turbine building wall design and other mitigating measures, as listed in CPA No. 4B96096.

2. **EMISSION UNIT (EU) IDENTIFICATION**

Each Emission Unit (EU) identified in Table 1 is subject to and regulated by this Plan Approval:

Table 1			
EU	Description	Design Capacity	Pollution Control Device (PCD)
1	ABB GT11N2 Combustion Turbine	1,423,080,000 Btu/hr (max heat rate input)	Selective Catalytic Reduction and CO Catalyst
2	Cummins Model No. 6BTA5.9-FI emergency diesel fire pump	1,500,000 Btu/hr (max heat rate input)	Exhaust silencer

Table 1 key:

EU = emission unit; Btu/hr = British Thermal Units per hour; Max = maximum; PCD = pollution control device; CO = Carbon Monoxide

3. APPLICABLE REQUIREMENTS

A. OPERATIONAL, PRODUCTION and EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Operational, Production and Emission Limits as contained in Table 2A through Table 2E below:

Table 2A			
EU	Operational/ Production Limit	Air Contaminant	Emission Limit
EU1	<ul style="list-style-type: none"> Table 2A: Note 1, 2, 3 and 4 		Tons Per Consecutive 12-Month Period
		SO ₂	13.4
		PM	74.5
		NO _x	75.0
		CO	68.0
		VOC	38.8
		NH ₃	79.1
Facility-wide ⁽³⁾	<ul style="list-style-type: none"> Table 2A: Note 1, 2, 3 and 4 	SO ₂	13.4
		PM	75.5
		NO _x	76.0
		CO	68.2
		VOC	40.9
		NH ₃	79.1

Table 2A notes:

- Combustion turbine potential emissions for NO_x, SO₂ and NH₃ are based on an ambient temperature of 50°F at 100% load firing natural gas 8,760 hours per year.
- Combustion turbine potential emissions for CO are based on an ambient temperature of 20°F at 75% load firing natural gas 8,760 hours per year. Combustion turbine potential emissions for PM and VOC are conservatively based on maximum permitted rate during startup, shutdown, re-commissioning, protective load shedding or tuneup periods, which are defined and specified in Section 3.A. Table 2D of this Plan Approval.
- Facility-wide potential emissions include the combustion turbine (EU1), the emergency diesel engine fire pump (EU2) operating 300 hours per year as restricted, a small 2-cell auxiliary cooler and other insignificant/miscellaneous activities associated with support operations.
- Potential emissions for ammonia (NH₃) are based on 10.0 ppmvd NH₃ slip, corrected to 15% O₂ and includes working and breathing losses from NH₃ storage and handling operations.

Table 2A key:

EU = emission unit; i.e. = that is; % = percent; °F = degrees Fahrenheit; ppmvd = parts per million by volume, dry; O₂ = oxygen; NO_x = oxides of nitrogen; SO₂ = sulfur dioxide; CO = carbon monoxide; VOC = volatile organic compounds; PM = particulate matter; NH₃ = Ammonia; Year or yr = a consecutive 12-month period (i.e. a “rolling 12-month period”); Tons/yr = tons per consecutive 12-month period (i.e. a “tons per rolling 12-month period”)

Table 2B

EU	Operational/ Production Limit	Air Contaminant	Emission Limit			
			Maximum Allowable Combustion Turbine Emissions			
			lb/hr	lb/MMBtu (HHV)	ppmvd @ 15% O ₂	tons/yr
1	Natural Gas 100% Load ⁽¹⁾⁽⁴⁾	SO ₂	3.27	0.0023	0.45	13.4
		PM	12.50	0.0088	N/A	51.2
		NO _x	18.36	0.0129	3.50	75.0
		CO	6.40	0.0045	2.00	26.2
		VOC	5.46	0.00384	3.0	22.3
		NH ₃	19.35	0.0136	10.0	79.1
	Natural Gas 75% Load ⁽²⁾⁽⁴⁾	SO ₂	2.65	0.0023	0.45	11.6
		PM	10.1	0.0088	N/A	44.3
		NO _x	14.84	0.0129	3.50	65.0
		CO	15.53	0.0135	6.00	68.0
		VOC	4.42	0.00384	3.00	19.3
		NH ₃	15.64	0.0136	10.0	68.5
	Natural Gas 50% Load ⁽³⁾⁽⁴⁾	SO ₂	2.12	0.0023	0.45	9.3
		PM	8.1	0.0088	N/A	35.5
		NO _x	11.87	0.0129	3.50	52.0
		CO	12.42	0.0135	6.00	54.4
		VOC	3.53	0.00384	3.00	15.5
		NH ₃	12.51	0.0136	10.0	54.8
	Natural Gas 100%, 75% and 50% Load	Opacity	No greater than 10%			

Table 2B notes:

- 100% Load:** Potential ton/yr emissions are based on 8,760 hours of operation at **100%** load at **50°F** ambient temperature for maximum heat rate inputs of 1,327.5 MMBtu/hr and 11,628,900 MMBtu/year.
- 75% Load:** Potential ton/yr emissions are based on 8,760 hours of operation at **75%** load at **20°F** ambient temperature for maximum heat rate inputs of 1,150.35 MMBtu/hr and 10,077,066 MMBtu/year.
- 50% Load:** Potential ton/yr emissions are based on 8,760 hours of operation at **50%** load at **20°F** ambient temperature for maximum heat rate inputs of 921.8 MMBtu/hr and 8,074,968 MMBtu/year.
- The above short-term emission limits (lb/hr, lb/MMBtu, and ppmvd) do not apply during periods of startup, shutdown, re-commissioning, protective load shedding or other tuning events/periods, which are defined and specified in Section 3.A. Table 2D of this Plan Approval.

Table 2B key:

EU = emission unit; Btu = British Thermal Unit; lb/hr = pounds per hour; ppmvd = parts per million by volume, dry; O₂ = oxygen; % = percent; °F = degrees Fahrenheit; NO_x = oxides of nitrogen; SO₂ = sulfur dioxide; CO = carbon monoxide; VOC = volatile organic compounds; PM = particulate matter; NH₃ = Ammonia; MMBtu = million Btu (heat rate input); HHV = higher heating value; i.e. = that is; lb/MMBtu = pounds per million Btu; Year or yr = a consecutive 12-month period (i.e. a “rolling 12-month period”) Tons/yr = tons per consecutive 12-month period (i.e. a “tons per rolling 12-month period”)

Table 2C

EU	Operational/ Production Limit	Air Contaminant	Emission Limit		
			Maximum Allowable Combustion Turbine Emissions by Load and Temperature		
			lb/hr ⁽¹⁾⁽²⁾		
			20°F Ambient	50°F Ambient	90°F Ambient
1	Natural Gas 100% Load ⁽¹⁾	SO ₂	3.27	3.05	2.74
		PM	12.50	11.7	10.5
		NO _x	18.36	17.12	15.37
		CO	6.40	5.97	5.36
		VOC	5.46	5.10	4.57
		NH ₃	19.35	18.05	16.20
	Natural Gas 75% Load ⁽¹⁾	SO ₂	2.65	2.49	2.24
		PM	10.1	9.5	8.6
		NO _x	14.84	13.95	12.55
		CO	15.53	14.60	13.14
		VOC	4.42	4.15	3.74
		NH ₃	15.64	14.71	13.24
	Natural Gas 50% Load ⁽¹⁾	SO ₂	2.12	1.97	1.71
		PM	8.1	7.6	6.6
		NO _x	11.87	11.07	9.61
		CO	12.42	11.58	10.06
		VOC	3.53	3.29	2.86
		NH ₃	12.51	11.67	10.13

Table 2C notes:

1. The emission limit at intermediate ambient temperatures (between 20°F and 90°F) and intermediate load (between 50% and 100%) is determined by linear interpolation between adjacent data points.
2. The above short-term emission limits (lb/hr) do not apply during periods of startup, shutdown, re-commissioning, protective load shedding or other tuning events/periods, which are defined and specified in Section 3.A. Table 2D of this Plan Approval.

Table 2C key:

EU = emission unit; NO_x = oxides of nitrogen; SO₂ = sulfur dioxide; CO = carbon monoxide; VOC = volatile organic compounds;
 PM = particulate matter; NH₃ = Ammonia; lb/hr = pound per hour; % = percent; °F = degrees Fahrenheit;
 MMBtu/hr = million British Thermal Units per hour (heat rate input)

Table 2D

EU	Operational/ Production Limit ⁽¹⁾⁽²⁾		Air Contaminant	Emission Limit ⁽¹⁾⁽²⁾		
				lb/hr	lb/MMBtu (HHV)	ppmvd @ 15% O ₂
1	Natural Gas	Startup, shutdown, re-commissioning, protective load shedding and other tuning periods	SO ₂	3.27	0.0023	0.45
			PM	17.0	0.05	N/A
			NO _x	262.0	0.74	200.00
			VOC	8.85	0.026	20.0
			NH ₃	15.6	0.0136	10.0
			Opacity	No greater than 10%		
		1 st 120 minutes of a cold start, re-commissioning, protective load shedding and other tuning periods	CO	232.0	0.336	150.0
		1 st 60 minutes of a hot start	CO	58.2	0.112	50.0
		All other startup operation	CO	43.2	0.045	20.0
		Shutdown operation	CO	23.4	0.045	20.0

Table 2D notes:

1. The combustion turbine shall operate at less than 50% power only during startup, shutdown, re-commissioning, protective load shedding or other tuning periods, as specified below. The SCR/CO control equipment shall be operational whenever the combustion turbine is operated at 50% power or greater.

Hot start: Operation not to exceed 90 minutes (1.5 hours). May be extended ≤ 60 minutes in the event the steam turbine is not ready to accept additional steam flow

Cold start: Operation not to exceed 240 minutes (4.0 hours)

Shutdown: Operation not to exceed 90 minutes (1.5 hours)

Re-commissioning: Operation not to exceed 1,800 minutes (30.0 hours)

Protective load shedding: Operation not to exceed 240 minutes (4.0 hours)

Other Tuning: Operation not to exceed 240 minutes (4.0 hours)

The above short-term emission limits (lb/hr, lb/MMBtu and ppmvd) are based on one (1) hour block averages. Time periods represent elapsed time (i.e. regardless of clock time, from flame ignition: Hour No. 1 is reckoned from the first minute to the 60th consecutive minute; Hour No. 2 from the 61st minute to the 120th consecutive minute, etc.). During periods of re-commissioning, protective load shedding or other tuning reasonable attempts will be made to limit the amount of emissions.

Table 2D definitions:

Hot start: Maximum duration of time to achieve emissions compliance representative of steady-state operation (at emission rates not to exceed those listed in Section 3.A.Tables 2B and 2C) at nominal 50% load with the turbine having been offline for a period of 24 hours or less.

Cold start: Maximum duration of time to achieve emissions compliance representative of steady-state operation (at emission rates not to exceed those listed in Section 3.A.Tables 2B and 2C) at nominal 50% load with the turbine having been offline for a period greater than 24 hours. If the turbine has had less than 120 minutes (2.0 hours) of flame time in the 24 hours preceding a start, the start shall be considered a cold start.

Shutdown: Maximum duration of time from emissions compliance representative of steady-state operation (at emission rates not to exceed those listed in Section 3.A.Tables 2B and 2C) at nominal 50% load to a “no flame” condition.

Table 2D definitions (continued)

Re-commissioning: The period required to complete the manufacturer’s recommended equipment tuning following the completion of a major inspection. The maximum duration that EU1 may operate below 50% power output or above “normal” emission limits (as specified in Section 3.A.Tables 2B and 2C) during a “re-commissioning” event is 1,800 minutes (30.0 hours).

Protective load shedding: An event during which EU1 reduces load to less than 50% power output without stopping the combustion process to protect the turbine. The maximum duration that EU1 may operate below 50% power output or above “normal” emission limits (as specified in Section 3.A.Tables 2B and 2C) during a “protective load shedding” event is limited to 240 minutes (4.0 hours)

Other tuning: The period required to complete the manufacturer’s recommended or necessary equipment tuning not associated with a major inspection. This may include, but not be limited to: emission tuning associated with a minor inspection or repair or associated with installation of equipment associated with the combustion turbine (e.g. a motor operated control valve, etc). The maximum duration that EU1 may operate below 50% power output or above “normal” emission limits (as specified in Section 3.A.Tables 2B and 2C) during “other tuning” is limited to 240 minutes (4.0 hours) per event.

Table 2D key:

EU = emission unit; NO_x = oxides of nitrogen; SO₂ = sulfur dioxide; CO = carbon monoxide; VOC = volatile organic compounds; PM = particulate matter; NH₃ = Ammonia; Btu = British Thermal Unit; Btu/hr = British Thermal Unit per hour; i.e. = that is; lb/hr = pounds per hour; ppmvd = parts per million by volume, dry; % = percent; ≤ = less than or equal to; °F = degrees Fahrenheit; O₂ = oxygen; lb/MMBtu = pounds per million Btu; MMBtu = million Btu (heat rate input); HHV = higher heating value; etc = and others

Table 2E					
EU	Operational/ Production Limit	Air Contaminant	Emission Limit		
			Maximum Allowable Emergency Diesel Fire Pump Emissions		
			lb/hr	lb/MMBtu (HHV)	tons/yr ⁽¹⁾
2	Ultra Low Sulfur Diesel 1.5 MMBtu/hr	SO ₂	0.003	0.002	0.0005
		PM	0.47	0.310	0.07
		NO _x	6.62	4.410	0.99
		CO	1.43	0.950	0.21
		VOC	0.54	0.360	0.08

Table 2E notes:

- Maximum allowable potential emissions for the emergency diesel fire pump reflect 300 hours per year maximum allowable operation for emergency purposes only, including normal maintenance and testing, as defined in 310 CMR 7.00.

Table 2E key:

EU = emission unit; NO_x = oxides of nitrogen; SO₂ = sulfur dioxide; CO = carbon monoxide; i.e. = that is; e.g. = for example; VOC = volatile organic compounds; PM = particulate matter; Btu = British Thermal Unit; MMBtu/hr = million Btu per hour; lb/hr = pounds per hour; lb/MMBtu = pounds per million Btu; MMBtu = million Btu (heat rate input); HHV = higher heating value
 Year or yr = a consecutive 12-month period (i.e. a “rolling 12-month period”)
 Ton/yr = tons per consecutive 12-month period (i.e. a “tons per rolling 12-month period”)

B. COMPLIANCE DEMONSTRATION

The Permittee is subject to, and shall comply with, the monitoring, testing, record keeping and reporting requirements as contained in Tables 3, 4, and 5 below:

Table 3	
EU	Monitoring and Testing Requirements
Facility-wide	1. Dighton Power shall ensure that the facility is constructed to accommodate the emission testing requirements contained herein. All emission testing will be conducted in accordance with 310 CMR 7.13 and the Department's <u>Guideline for Source Emission Testing</u> and in accordance with applicable U.S. EPA test methods as specified in 40 CFR 60, 40 CFR 72, 40 CFR 75 and 310 CMR 7.00 or by a methodology approved by the Department. The dates and times for conducting emissions compliance testing shall be coordinated with Department personnel for a mutually agreed-upon schedule for testing.
	2. Prior to compliance testing when required by the Department, a pre-test protocol shall be submitted for Department review and approval. The Protocol shall include a detailed description of sampling port locations, sampling equipment, sampling and analytical procedures and operating conditions for any such emissions testing. The Test Protocol must be submitted to the Department at least thirty (30) days prior to the commencement of testing for written Department approval prior to testing. The pre-test protocol shall identify the independent third-party testing company, if known.
	3. The final compliance test results report shall be submitted to the Department within forty-five (45) days of the completion of testing. The final emission test report shall include, but not be limited to: a description of the emission compliance testing program conducted, applicable emission limits for which testing was required and a summary of test results demonstrating compliance and/or noncompliance with applicable limits, sampling point locations, sampling equipment, analytical procedures, actual test methods used, the actual operating conditions for which the testing was conducted and the identity of the independent third-party testing company.
	4. Pursuant to 310 CMR 7.13, the Department may require additional emissions testing of the facility at any time in order to ascertain compliance with the Department's Regulations or any provision, condition and/or requirement(s) contained in this Plan Approval.
	5. Dighton Power shall (minimally) install, calibrate, test and operate a data acquisition system(s) (DAS) and stack CEMS to measure and record flue gas emissions of NO _x , CO, O ₂ and NH ₃ .
	6. Dighton Power shall use and maintain its CEMS as "direct compliance" monitors to measure NO _x , CO (and VOC), O ₂ and NH ₃ . "Direct compliance" monitors generate data that legally documents the compliance status of a source. The Department shall utilize the data generated by the "direct compliance" monitors for compliance and enforcement purposes.
	7. All periods of excess emissions, even if attributable to an emergency, malfunction, startup, shutdown, re-commissioning, protective load shedding and other tuning events/periods shall be quantified and included in the determination of yearly emissions and compliance with the emission limits as stated in Tables 2A, 2B, 2C, 2D and 2E of this Plan Approval. Any period of excess emissions of CO shall count as a period of excess emissions of VOC and the excess emissions of VOC shall be accumulated towards the 40.9 tons per consecutive 12-month period facility-wide emission limitation for VOC, listed in Table 2A of this Plan Approval.

Table 3

EU	Monitoring and Testing Requirements
Facility-wide	<p>8. Dighton Power shall determine continuous compliance with the VOC emission limits (one-hour block average and yearly) contained herein by monitoring CO emissions with the CO CEMS. If the gas turbine is operating in a condition of cold start, hot start, shutdown, re-commissioning, protective load shedding or other tuning events/periods, the VOC emissions shall be considered as occurring at the emission rate approved herein (in Table 2D) for such periods of time, provided that the monitored CO emissions are within the limitations specified in Table 2D of this Plan Approval.</p> <p>If the gas turbine is operating at 50% load or greater and if CO emissions are <u>below</u> the CO emission limit at the given gas turbine operating conditions, the VOC emissions shall be considered as occurring at the emission limit contained in this Plan Approval.</p> <p>If the gas turbine is operating at 50% load or greater and if CO emissions are <u>above</u> the CO emission limit at the given gas turbine operating conditions, the VOC emissions shall be considered as occurring at determined by the following equation:</p> $VOC_{Actual} = VOC_{Limit}(CO_{Actual}/CO_{Limit})$
	<p>9. Dighton Power shall ensure that all stack monitors and recording equipment comply with Department-approved performance and location specifications and conform with the U.S. EPA monitoring specifications at 40 CFR 60.13, 40 CFR 60 Appendices B and F, 40 CFR 72, 40 CFR 75 and 310 CMR 7.00, as applicable.</p>
	<p>10. Dighton Power shall comply with all applicable monitoring requirements contained in 40 CFR 60, 40 CFR 72, 40 CFR 75 and 310 CMR 7.00, as applicable or subject to any custom monitoring schedule approved by the Department.</p>
	<p>11. Dighton Power shall equip the CEMS with audible and visible alarms to activate when emissions exceed the limits established in Tables 2B, 2C and 2D of this Plan Approval.</p>
	<p>12. Dighton Power shall operate each CEMS at all times, except for periods of CEMS QA/QC, calibration checks, zero and span adjustments, CEMS malfunction, maintenance and repair.</p>
	<p>13. Dighton Power shall obtain and record emission data from each CEMS for at least 75% of the emission unit operating hours per day, for at least 75% of the emission unit operating hours per month and for at least 95% of the emission unit operating hours per quarter. For the daily periods, periods of CEMS QA/QC activities, calibration checks, zero and span adjustments and preventive maintenance may be excluded from the 75% requirement. In all cases, 40 CFR Part 75 data validation protocols may be used when calculating the data percentages.</p>
	<p>14. Dighton Power shall monitor and record the sulfur and nitrogen content in natural gas in accordance with 40 CFR 60, Subpart GG and 40 CFR 75, as applicable.</p>
	<p>15. Dighton Power shall maintain onsite for the CEMS equipment, an adequate supply of spare parts to maintain the online availability and data capture requirements pursuant to this Plan Approval.</p>

Table 3

EU	Monitoring and Testing Requirements
Facility-wide	16. Dighton Power shall install and operate continuous monitors and alarm systems to monitor temperatures at the inlets to the control system SCR and CO catalysts.
	<p>17. Dighton Power shall comply with all provisions of 40 CFR 60, 40 CFR 72, 40 CFR 75 and 310 CMR 6.00 through 8.00 that are applicable to this facility. The following alternative monitoring schedule shall apply, which permits certain features of the operation, data validation and data reduction of the continuous emission monitoring system (CEMS) to be operated at variance with the established requirements of 40 CFR Parts 60 and 75:</p> <ul style="list-style-type: none"> a. In lieu of the calibration drift limit of 2.5%, as required by 40 CFR 60, Appendix B, Performance Specification (PS) 2, Dighton Power shall use an alternative calibration drift limit of 0.5% (or 0.5 ppm) in the event that 40 CFR 60 calibration performance re-testing of the NO_x analyzer low range scale (10 ppm) is required. This alternative calibration drift limit is to be used for the 7-day drift test. The drift limits for routine daily calibration checks for determination of out-of-control periods will remain as at the levels specified in 40 CFR 60, Appendix F, Section 4 and Appendix B, PS 2. b. In lieu of the relative accuracy requirement of 20% of the Reference Method or 10% of the standard as required by 40 CFR 60, Appendix B, Dighton Power shall use an alternative relative accuracy of 0.5 ppm of NO_x, corrected to 15% O₂ and 0.002 lb/MMBtu. For lb/hr emission limits, Dighton Power shall use a relative accuracy corresponding to 0.002 lb/MMBtu times the arithmetic average of the average firing rate during each relative accuracy test audit (RATA) run. The lb/hr of NO_x emissions, as measured by the Reference Method during the RATA, will be the lb/MMBtu of NO_x as measured by the Reference Method times the MMBtu/hr firing rate, during each RATA run, as measured by the 40 CFR 75 compliant fuel flow meter. c. In lieu of the quarterly cylinder gas audit (CGA) procedures required under 40 CFR 60, Appendix F, Dighton Power shall use the 40 CFR 75, Appendices A and B linearity procedures for the quarterly CGA testing for NO_x and O₂. d. Dighton Power will not be required to conduct a CGA for CO and NH₃ in any quarter that the combustion turbine operates less than 168 hours. e. Dighton Power shall perform hourly data validation, in accordance with 40 CFR 75.10(d)(1) for NO_x, O₂, CO and NH₃, which specifies that a valid data hour must contain at least one valid (quality assured) data point in each of the 15-minute quadrants that the combustion turbine is online. However, valid data is only required in two 15-minute quadrants for hours in which quality assurance or preventive maintenance activities are being conducted on the CEMS. f. Dighton Power shall apply O₂ diluent caps, in accordance with the 40 CFR 75, Appendix F, Section 3 provisions for the determination of lb/MMBtu and ppmvd at 15% O₂ emission rates. g. Dighton Power shall designate an hour during which fuel is fired for any period as an “operating hour”, in accordance with 40 CFR 72.2 definitions. h. In lieu of the 40 CFR 60 requirements, the high range of the NO_x analyzer shall be subject to quarterly quality assurance assessment in accordance with 40 CFR 75. i. Data validation and frequency for performing daily calibration error (CE) tests, routine quality assurance cylinder gas audits (CGA) and Relative Accuracy Test Audits (RATA) may be conducted in accordance with the applicable quality assurance provisions for NO_x CEMS contained in 40 CFR 75 Appendix B, Section 2.1 for CE, Section 2.2 for CGA and Section 2.3 for RATA.

Table 3 definitions:

Hot start: Maximum duration of time to achieve emissions compliance representative of steady-state operation (at emission rates not to exceed those listed in Section 3.A.Tables 2B and 2C) at nominal 50% load with the turbine having been offline for a period of 24 hours or less.

Cold start: Maximum duration of time to achieve emissions compliance representative of steady-state operation (at emission rates not to exceed those listed in Section 3.A.Tables 2B and 2C) at nominal 50% load with the turbine having been offline for a period greater than 24 hours. If the turbine has had less than 120 minutes (2.0 hours) of flame time in the 24 hours preceding a start, the start shall be considered a cold start.

Shutdown: Maximum duration of time from emissions compliance representative of steady-state operation (at emission rates not to exceed those listed in Section 3.A.Tables 2B and 2C) at nominal 50% load to a “no flame” condition.

Re-commissioning: The period required to complete the manufacturer’s recommended equipment tuning following the completion of a major inspection. The maximum duration that EU1 may operate below 50% power output or above “normal” emission limits (as specified in Section 3.A.Tables 2B and 2C) during a “re-commissioning” event is 1,800 minutes (30.0 hours).

Protective load shedding: An event during which EU1 reduces load to less than 50% power output without stopping the combustion process to protect the turbine. The maximum duration that EU1 may operate below 50% power output or above “normal” emission limits (as specified in Section 3.A.Tables 2B and 2C) during a “protective load shedding” event is limited to 240 minutes (4.0 hours)

Other tuning: The period required to complete the manufacturer’s recommended or necessary equipment tuning not associated with a major inspection. This may include, but not be limited to: emission tuning associated with a minor inspection or repair or associated with installation of equipment associated with the combustion turbine (e.g. a motor operated control valve, etc). The maximum duration that EU1 may operate below 50% power output or above “normal” emission limits (as specified in Section 3.A.Tables 2B and 2C) during “other tuning” is limited to 240 minutes (4.0 hours) per event.

Emergency: Any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation would require immediate corrective action to restore normal operation, and that causes the source to exceed a technology based limitation under the Plan Approval, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operations, operator error or decision to keep operating despite knowledge of any of these things.

Malfunction: Any sudden and unavoidable failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner. Failures that are caused entirely, or in part, by poor maintenance, careless operation or any other preventable upset condition or preventable equipment breakdown, shall not be considered malfunctions.

Table 3 key:

EU = emission unit; NO_x = oxides of nitrogen; SO₂ = sulfur dioxide; CO = carbon monoxide; VOC = volatile organic compounds; PM = particulate matter; NH₃ = Ammonia; % = percent; ≤ = less than or equal to; °F = degrees Fahrenheit; O₂ = oxygen; ppmvd = parts per million volume dry; Btu = British Thermal Unit; MMBtu = million Btu (heat rate input); lb/MMBtu = pounds per million Btu; lb/hr = pounds per hour; CFR = Code of Federal Regulations; CMR = Code of Massachusetts Regulations; USEPA or U.S. EPA = United States Environmental Protection Agency; MassDEP or Department = Massachusetts Department of Environmental Protection; SERO = MassDEP Southeast Regional Office, 20 Riverside Drive, Lakeville, MA 02347; BAW = MassDEP SERO Bureau of Air and Waste; CEMS = continuous emissions monitoring system; QA/QC = Quality Assurance/ Quality Control; Year, yearly or yr = a consecutive 12-month period (i.e. a “rolling 12-month period”); DAS = Data Acquisition System; SCR = Selective Catalytic Reduction

Table 4	
EU	Record Keeping Requirements
Facility-wide	1. Dighton Power shall maintain, for the life of the facility, all operating monitoring records and logs. Dighton Power shall maintain onsite and make available to the Department and/or U.S. EPA for inspection upon request, the five (5) most recent years' data/records.
	2. Dighton Power shall maintain records on the natural gas sulfur content in accordance with 40 CFR 60 Subpart GG and 40 CFR 75, as applicable.
	3. Dighton Power shall maintain onsite permanent records of output from all continuous monitors for flue gas emissions, daily and yearly fuel consumption, emergency engine operating hours, SCR and CO control system inlet temperatures, turbine inlet and ambient temperatures and a tabulation of periods of operation (dispatch). These records shall be made available to the Department and/or U.S. EPA on request.
	4. Dighton Power shall maintain a log to record problems, upsets or failures associated with the emission control system, CEMS or ammonia handling system.
	5. Dighton Power shall comply with all applicable recordkeeping requirements contained in 40 CFR 60, 40 CFR 72, 40 CFR 75, 310 CMR 7.00 and this Plan Approval.

Table 4 key:

EU = emission unit; PCD = Pollution Control Device; NO_x = oxides of nitrogen; SO₂ = sulfur dioxide; CO = carbon monoxide; VOC = volatile organic compounds; PM = particulate matter; NH₃ = Ammonia; % = percent; ≤ = less than or equal to; °F = degrees Fahrenheit; O₂ = oxygen; i.e. = that is; lb/hr = pound per hour; ppmvd = parts per million volume dry; SOMP = Standard Operating and Maintenance Procedure;; USEPA or U.S. EPA = United States Environmental Protection Agency; MassDEP or Department = Massachusetts Department of Environmental Protection; CMR = Code of Massachusetts Regulation; CEMS = continuous emissions monitoring system; SCR = Selective Catalytic Reduction; Year, yearly or yr = a consecutive 12-month period (i.e. a "rolling 12-month period"); Ton/yr = tons per consecutive 12-month period (i.e. a "tons per rolling 12-month period")

Table 5	
EU	Reporting Requirements
Facility-wide	1. Dighton Power shall notify the MassDEP, SERO, BAW, Permit Chief by telephone: 508-946-2824, email: sero.air@state.ma.us or fax: 508-947-6557, as soon as possible, but no later than three (3) days after discovery of an exceedance(s) of Plan Approval SE-15-012 Table 2A, Table 2B, Table 2C, Table 2D and/or Table 2E requirements. A written report shall be submitted to MassDEP, SERO, BAW, Permit Chief within ten (10) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken and action plan to prevent future exceedance(s).
	2. Dighton Power shall immediately notify the MassDEP, SERO, BAW, Permit Chief by telephone: 508-946-2824 and within three (3) working business days in writing, following a release or the threat of a release of ammonia and/or upsets or malfunctions to the ammonia handling or delivery systems. Dighton Power must comply with all notification procedures required under MGL c. 21E <u>Spill Notification Regulations</u> .

Table 5

EU	Reporting Requirements
Facility-wide	3. The Permittee shall provide a copy to MassDEP of any record required to be maintained by this Plan Approval <u>within</u> thirty (30) days from MassDEP's request.
	4. The Permittee shall file a Source Registration report in accordance with 310 CMR 7.12. <u>U Source Registration (1) Applicability (a)9.</u>
	5. Dighton Power shall comply with all applicable reporting requirements contained in 40 CFR 60, 40 CFR 72, 40 CFR 75, 310 CMR 7.00 and this Plan Approval.
	6. Dighton Power shall submit a report quarterly to the Department. This report shall be submitted by the 15 th of the following month and shall minimally contain the following information: a. The monthly reports from the facility CEMS containing summary emission data in a format acceptable to the Department. b. For each period of excess emissions or excursions from allowable operating conditions, Dighton Power shall list the duration, cause (including whether it is attributable to a malfunction or emergency), the response taken and the amount of excess emissions. Periods of excess emissions shall include periods of startups, shutdowns, re-commissioning, protective load shedding, other tuning, malfunction, emergency and upsets or failures associated with the emission control system or CEMS. c. A tabulation of periods of operation (dispatch).
	7. Dighton Power shall notify the MassDEP, SERO, BAW, Permit Chief in writing at least three (3) business days prior to any equipment tuning or re-commissioning events, as defined in this Plan Approval.
	8. Dighton Power shall submit to MassDEP all information required by this Plan Approval over the signature of a "Responsible Official" as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)c.
	9. All notifications and reporting required by this PLAN APPROVAL, unless otherwise specified, shall be made to the attention of: Massachusetts Department of Environmental Protection Southeast Regional Office Bureau of Air and Waste 20 Riverside Drive Lakeville, Massachusetts 02347 Attn: Thomas Cushing, Permit Chief Phone: (508) 946-2824 Fax: (508) 947-6557

Table 5 definitions:

Emergency: any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation would require immediate corrective action to restore normal operation, and that causes the source to exceed a technology based limitation under the Plan Approval, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operations, operator error or decision to keep operating despite knowledge of any of these things.

Malfunction: any sudden and unavoidable failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner. Failures that are caused entirely, or in part, by poor maintenance, careless operation or any other preventable upset condition or preventable equipment breakdown, shall not be considered malfunctions.

Table 5 key:

EU = emission unit; NO_x = oxides of nitrogen; SO₂ = sulfur dioxide; CO = carbon monoxide; VOC = volatile organic compounds; PM = particulate matter; NH₃ = Ammonia; % = percent; ≤ = less than or equal to; °F = degrees Fahrenheit; O₂ = oxygen; lb/hr = pound per hour; CMR = Code of Massachusetts Regulations; MassDEP or Department = Massachusetts Department of Environmental Protection; SERO = MassDEP Southeast Regional Office, 20 Riverside Drive, Lakeville, MA 02347; BAW = MassDEP SERO Bureau of Air and Waste; CEMS = Continuous Emissions Monitoring System; MGL = Massachusetts General Laws; c. = chapter

4. SPECIAL TERMS AND CONDITIONS

A. The Permittee is subject to and shall comply with the Special Terms and Conditions as contained in Table 6 below:

Table 6							
EU	Special Terms and Conditions						
Facility-wide	1. Sound levels shall not exceed the allowable sound impacts specified below or fail to comply with the Department’s Division of Air Quality Control (DAQC) Noise Policy No. 90-001. The operation of the facility shall result in no “pure tones” as defined by the DAQC Noise Policy No. 90-001.						
	Noise Receptors	Allowable Sound Impacts: A-Weighted Sound Level in Decibels - dB(A)					
		Nighttime Ambient (L ₉₀)	Nighttime Ambient + Plant Impact (L ₉₀)	Nighttime Change	Daytime Ambient (L ₉₀)	Daytime Ambient + Plant Impact (L ₉₀)	Daytime Change
	RP-1 ⁽¹⁾	30	40	10	44	45	1
	RP-2 ⁽²⁾	28	38	10	37	40	3
	RP-3 ⁽³⁾	28	38	10	38	41	3
	RP-4 ⁽⁴⁾	28	38	10	34	39	5
	RP-5 ⁽⁵⁾	29	39	10	32	40	8
	CNL-1 ⁽⁶⁾	30	55	25	44	55	11
	CNL-2 ⁽⁷⁾	28	60	32	34	60	26
	CNL-3 ⁽⁸⁾	28	60	32	34	60	26
	CNL-4 ⁽⁹⁾	(See note 9)	---	---	---	---	---
	Table 6 Special Terms and Condition No. 1. Allowable Sound Impacts table notes:						
(1) Receptor RP-1 (Lot 164) is the closest residence east (E). It is owned by Dighton Power.							
(2) Receptor RP-2 (formerly Elmasian/Harwood property line) is the residence southeast (SE).							
(3) Receptor RP-3 is the residential neighborhood near Susan Road west (W).							
(4) Receptor RP-4 (Cartin property line) is the residence northwest (NW).							
(5) Receptor RP-5 (Leonard property line) is the residence north (N).							
(6) Receptor CNL-1 (Advanced Looseleaf) is the property line east (E).							
(7) Receptor CNL-2 (Bristol County Agricultural School) is the property line north (N).							
(8) Receptor CNL-3 (Town of Somerset) is the property line southwest (SW).							
(9) Receptor CNL-4 (formerly Dighton Power/Elmasian property line) to the south (S) is now located on land owned by Dighton Power.							
2. Dighton Power shall maintain compliance with operational and emission limitations, including monitoring, testing, record keeping, reporting requirements, including special terms and conditions, contained in this Plan Approval.							
3. Dighton Power shall comply with the approved short-term emission limits (lb/hr, lb/MMBtu and ppmvd) specified in this Plan Approval based on a one (1) hour block average.							
4. Natural gas shall be the only fuel burned in the combustion turbine (EU1).							
5. The maximum sulfur content of the natural gas shall not exceed 0.8 grains per 100 cubic foot (gr/100 ft ³).							

Table 6

EU	Special Terms and Conditions
Facility-wide	<p>6. The Permittee shall be shielded from enforcement action brought for noncompliance with technology-based emission limitations⁽¹⁾ specified in this Plan Approval as a result of an emergency⁽²⁾. In order to use emergency⁽²⁾ as an affirmative defense to an action brought for noncompliance, the Permittee shall demonstrate the affirmative defense through properly signed, contemporaneous operating logs or other relevant evidence that:</p> <ul style="list-style-type: none"> A. an emergency⁽²⁾ occurred and that the Permittee can identify the cause(s) of the emergency⁽²⁾; B. the permitted facility was at the time being properly operated; C. during the period of the emergency⁽²⁾, the Permittee took all reasonable steps as expeditiously as possible, to minimize levels of emissions that exceeded the emissions standards or other requirements in this Plan Approval; and D. the Permittee submitted notice of the emergency⁽²⁾ to the MassDEP within two (2) business days of the time when emission limitations were exceeded due to the emergency⁽²⁾. This notice must contain a description of the emergency⁽²⁾, any steps taken to mitigate emission and corrective actions taken. <p>If an emergency⁽²⁾ episode requires immediate notification to the Bureau of Waste Site Cleanup/Emergency Response, immediate notification to the appropriate parties should be made as required by law.</p> <p>(1) "Technology-based emission limits" are those established on the basis of emission reductions achievable with various control measures or process changes (e.g., a new source performance standard) rather than those established to attain health based air quality standards.</p> <p>(2) "Emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation would require immediate corrective action to restore normal operation, and that causes the source to exceed a technology based limitation under the Plan Approval, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operations, operator error or decision to keep operating despite knowledge of any of these things.</p> <p>7. Dighton Power shall comply with all applicable operational standards contained in 40 CFR 60, 40 CFR 72, 40 CFR 75 and 310 CMR 7.00, as applicable.</p> <p>8. Dighton Power shall ensure that the SCR control equipment for the gas turbine is operational whenever the turbine is operated at 50% power or greater.</p> <p>9. EU1 carbon monoxide (CO) catalyst shall achieve and maintain a 75% minimum CO removal efficiency under 100% load operation and a 76% minimum CO removal efficiency under 75% load operation. Demonstration of compliance with the CO emission limits in Tables 2B and 2C of this Plan Approval shall be deemed to satisfy demonstration of compliance with the CO removal efficiency requirements herein.</p>

Table 6

EU	Special Terms and Conditions
Facility -wide	<p>10. Dighton Power shall properly train all personnel to operate the facility and control equipment in accordance with vendor specifications. All persons responsible for the operation of the ammonia handling and SCR control systems shall sign a statement, affirming that they have read and understand the approved standard operating and standard maintenance procedures. This training shall be updated at least once annually.</p>
	<p>11. Dighton Power shall allow the gas turbine to operate at less than 50% power only during startups, shutdowns, re-commissioning, protective load shedding and other tuning events/periods, as defined herein. Operation at these loads for “hot start” shall not exceed 90 minutes (1.5 hours). The hot start period may be extended for no more than an additional 60 minutes (1.0 hour), if the steam turbine is not ready to accept additional steam flow. The gas turbine must be in stable operation and all emission levels must be in compliance with Table 2D during the extended hot start. Should the hot start be extended, Dighton Power will report the extension and the reasons for it in the report required in Section 3.B. Table 5 Condition 6 of this Plan Approval. Operation for “cold start” shall not exceed 240 minutes (4.0 hours). Operations for shutdown shall not exceed 90 minutes (1.5 hours).</p> <p>A “hot start” is defined as the maximum duration of time to achieve emissions compliance representative of steady-state operation (at emission rates not to exceed those listed in Section 3.A.Tables 2B and 2C) at nominal 50% load with the turbine offline for 24 hours or less.</p> <p>A “cold start” is defined as the maximum duration of time to achieve emissions compliance representative of steady-state operation (at emission rates not to exceed those listed in Section 3.A.Tables 2B and 2C) at nominal 50% load with the turbine having been off-line for a period greater than 24 hours. If the turbine has had less than 120 minutes (2.0 hours) of flame time in the 24 hours preceding a start, the start will be considered a cold start.</p> <p>“Shutdown” is defined as the maximum duration of time from emissions compliance representative of steady-state operation (at emission rates not to exceed listed in Section 3.A.Tables 2B and 2C) at 50% nominal load to “no flame”.</p> <p>“Re-commissioning” is defined as the period required to complete the manufacturer’s recommended equipment tuning following the completion of a major inspection. The maximum duration that EU1 may operate below 50% power output or above “normal” emission limits (as specified in Section 3.A.Tables 2B and 2C) during a “re-commissioning” event is 1,800 minutes (30.0 hours).</p> <p>“Protective load shedding” is defined as an event during which EU1 reduces load to less than 50% power output without stopping the combustion process to protect the turbine. The maximum duration that EU1 may operate below 50% power output or above “normal” emission limits (as specified in Section 3.A.Tables 2B and 2C) during a “protective load shedding” event/period is limited to 240 minutes (4.0 hours)</p> <p>“Other Tuning” is defined as the period required to complete the manufacturer’s recommended or necessary equipment tuning <u>not</u> associated with a major inspection. This may include, but not be limited to: emission tuning associated with a minor inspection or repair or associated with installation of equipment associated with the combustion turbine (e.g. a motor operated control valve, etc). The maximum duration that EU1 may operate below 50% power output or above “normal” emission limits (as specified in Section 3.A.Tables 2B and 2C) during “other tuning” is limited to 240 minutes (4.0 hours) per event.</p>
	<p>12. Dighton Power shall ensure that during re-commissioning, protective load shedding or other tuning periods/events all reasonable attempts are made to limit the amount of air emissions.</p>
	<p>13. The maximum allowable heat rate input for the combustion turbine shall not exceed 1,423.08 MMBtu/hr (HHV) at 100% load operation nor shall it exceed 1,150.35 MMBtu/hr (HHV) at 75% load operation.</p>

Table 6

EU	Special Terms and Conditions
Facility-wide	14. The maximum allowable heat rate input for the combustion turbine shall not exceed 11,628,900 MMBtu per consecutive 12-month period for 100% load operation (maximum total input if turbine operated 8,760 hours per consecutive 12-month period at 100% load). Operation of the turbine at variable load conditions (i.e. conditions other than full-time operation at 100% load, 8,760 hours per consecutive 12-month period), including, but not limited to startup, shutdown, re-commissioning, protective load shedding and other tuning events/periods shall not result in an exceedance of the maximum allowable potential emissions listed in Table 2A of this Plan Approval. Records shall be maintained to document that the maximum allowable emission limitations in Table 2A of this Plan Approval are not exceeded.
	15. The maximum allowable hours of operation for the emergency diesel engine fire pump (EU2) shall not exceed 300 hours per year. The engine shall operate for “emergency purposes” only, including normal maintenance and testing, as defined in 310 CMR 7.00.
	16. Ultra Low Sulfur Diesel (ULSD) shall be the only fuel burned in the emergency diesel engine fire pump (EU2). The ULSD to be burned shall have a sulfur content not in excess of 0.0015% sulfur content by weight
	17. Dighton Power shall ensure that the facility’s auxiliary cooling tower uses no chromium-based water treatment chemicals.
	18. Dighton Power shall, at all times, keep enough of the ball-plastic baffles within the containment area around the ammonium hydroxide storage tank to provide 91% surface coverage of any spilled ammonium hydroxide. The balls must be free of ice and other restrictions that would inhibit their flotation.
	19. Dighton Power shall maintain in the facility control room, portable ammonia detectors (e.g. Draeger tubes) for use during a spill or a typical atmospheric release.
	20. Dighton Power shall store the standard operating and maintenance procedures for the ammonia handling system in a convenient location (control room/technical library) and make them readily available to all employees.
	21. All requirements of this Plan Approval which apply to the Dighton Power shall apply to all subsequent owners and/or operators of the facility.
	22. Dighton Power shall submit a revised Operating Permit Renewal Application No. SE-14-006 (Transmittal No. X259349) within forty-five (45) days of the date of this Plan Approval to address the provisions, conditions, terms and requirements etc of Plan Approval No. SE-15-012. Dighton Power shall submit all information over the signature of a “Responsible Official”, as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)c.
	23. Plan Approval SE-15-012 dated July 13, 2015 supersedes Final Approval 4B02019 (Transmittal No. W028782) issued on July 19, 2002.

Table 6 key:

EU = emission unit; NO_x = oxides of nitrogen; SO₂ = sulfur dioxide; CO = carbon monoxide; VOC = volatile organic compounds; PM = particulate matter; NH₃ = Ammonia; % = percent; ≤ = less than or equal to; °F = degrees Fahrenheit; O₂ = oxygen; etc = and others; i.e. = that is; e.g. = for example; USEPA = United States Environmental Protection Agency; CFR = Code of Federal Regulations; dB(A) = decibels, A-weighted; MassDEP = Massachusetts Department of Environmental Protection; SERO = MassDEP Southeast Regional Office, 20 Riverside Drive, Lakeville, MA 02347; BAW = MassDEP SERO Bureau of Air and Waste; gr = grains; ft³ = cubic foot; HHV = higher heating value; Annually = calendar year; Year or yr = a consecutive 12-month period (i.e. a “rolling 12-month period”); CEM = continuous monitoring systems; MMBtu = million Btu (heat rate input); ULSD = Ultra Low Sulfur Diesel; ppm = parts per million; ppmvd = parts per million volume dry; PS = Performance Specification; CE = calibration error; CGA = cylinder gas audit; RATA = relative accuracy test audit; lb/MMBtu = pounds per million Btu; MMBtu/hr = million British Thermal Units per hour; lb/hr = pound per hour; PLS = protective load shedding;

5. GENERAL CONDITIONS

The Permittee is subject to and shall comply with the following general conditions:

- A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).
- B. If asbestos remediation/removal will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.
- C. If construction or demolition of an industrial, commercial or institutional building will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.
- D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.
- E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future.
- F. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.
- G. Pursuant to 310 CMR 7.02(3)(k), MassDEP may revoke this Plan Approval if the construction work is not commenced within two years from the date of issuance of this Plan Approval, or if the construction work is suspended for one year or more.
- H. This Plan Approval may be suspended, modified, or revoked by MassDEP if MassDEP determines that any condition or part of this Plan Approval is being violated.
- I. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.
- J. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between

provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

6. MASSACHUSETTS ENVIRONMENTAL POLICY ACT

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain “Fail-Safe Provisions,” which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.

7. APPEAL PROCESS

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Enclosed is a stamped approved copy of the application submittal.

Should you have any questions concerning this Plan Approval, please contact Mark R. Poudrier by telephone at 508-946-2783 or in writing at the letterhead address.

This final document copy is being provided to you electronically by the
Department of Environmental Protection. A signed copy of this document
is on file at the DEP office listed on the letterhead.

Thomas Cushing
Permit Chief
Bureau of Air and Waste

Enclosure

ecc: Dighton Board of Health
Dighton Fire Department
D. Cartney, Berkshire Environmental
Y. Tian, MassDEP/Boston
M. Pinaud, MassDEP/SERO/BAW